

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 090 591 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
06.06.2001 Bulletin 2001/23

(51) Int Cl.7: **A61B 17/068**, **A61B 17/68**,
A61B 17/04, **B21J 15/06**

(43) Date of publication A2:
11.04.2001 Bulletin 2001/15

(21) Application number: **00308523.0**

(22) Date of filing: **28.09.2000**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(72) Inventors:
• **McAllen, John, III**
Point Pleasant, NJ 08742 (US)
• **Overtaker, David W.**
Annandale, NJ 08801 (US)
• **Cooper, Kevin L.**
Warren, NJ 07059 (US)

(30) Priority: **29.09.1999 US 408249**

(71) Applicant: **ETHICON, INC.**
Somerville, NJ 08876 (US)

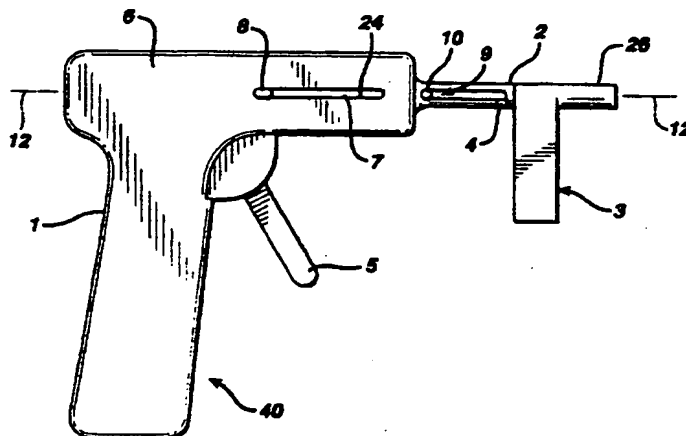
(74) Representative: **Mercer, Christopher Paul et al**
Carpmaels & Ransford
43, Bloomsbury Square
London WC1A 2RA (GB)

(54) Absorbable rivet/pin applier for use in surgical procedures

(57) This invention describes a rivet applier (40) and rivet clip (3) for delivering orthopedic fasteners into a patient. The rivet applier (40) inserts the rivet body (11) then drives a pin (31) into the rivet body to fix the rivet in position. The device comprises a body with a handle (1), trigger (5) and applier barrel (2). The rivet applier (40) contains a loader (9) and firing pin (7) to advance and deploy rivets (11). The applier barrel (2) of the rivet

applier (40) is attached to a rivet clip (3) into which rivets (11) may be loaded. The rivets (11) are contained in the body of the rivet clip (3) and loaded into the barrel (2) of the rivet clip (3) through a chamber (28). The loader (9) of the rivet applier advances the rivet (11) to the end of the barrel (2). The firing pin (7) advances the rivet body (11) into final position and inserts the rivet pin (31) into the rivet.

FIG. 1





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 30 8523

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 4 535 925 A (RAMEY CARL ET AL) 20 August 1985 (1985-08-20) * column 11, line 48 - column 12, line 60; figures 7,8,10 *	1,3,4,6, 8,12	A61B17/068 A61B17/68 A61B17/04 B21J15/06
X	WO 99 26544 A (BIONX IMPLANTS OY) 3 June 1999 (1999-06-03) * page 9, line 10 - page 16, line 24; figures 1,7-9 *	12	
A	---	1,4,6,8	
D,A	US 5 268 001 A (NICHOLSON JAMES E ET AL) 7 December 1993 (1993-12-07) * column 11, line 38 - column 12, line 28; figures 3.1,3.2 *	1,4,6,8, 12	
A	US 5 928 244 A (TOVEY IAN J ET AL) 27 July 1999 (1999-07-27) * column 4, line 15 - column 5, line 26; figures 5,6 *	1,4,6,12	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A61B B21J
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 3 April 2001	Examiner Ducreau, F
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03/92 (P4/C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 30 8523

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

03-04-2001

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 4535925	A	20-08-1985	NONE		
WO 9926544	A	03-06-1999	US	6010513 A	04-01-2000
			AU	1757399 A	15-06-1999
			CN	1280472 T	17-01-2001
			EP	1033939 A	13-09-2000
US 5268001	A	07-12-1993	US	5725529 A	10-03-1998
			US	5968044 A	19-10-1999
			US	5860978 A	19-01-1999
			US	5911721 A	15-06-1999
			AT	174777 T	15-01-1999
			AU	685879 B	29-01-1998
			AU	1009295 A	09-03-1995
			AU	653752 B	13-10-1994
			AU	8736791 A	15-04-1992
			CA	2092400 A	26-03-1992
			DE	69130681 D	04-02-1999
			DE	69130681 T	10-06-1999
			EP	0557306 A	01-09-1993
			ES	2129413 T	16-06-1999
			JP	6505888 T	07-07-1994
			WO	9204874 A	02-04-1992
US 5928244	A	27-07-1999	CA	2217435 A	04-04-1998
			EP	0834280 A	08-04-1998

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

THIS PAGE BLANK (USPTO)